

E1
19. (Amended) Injection molding apparatus comprising a nozzle (10) with an inner portion (12) having a front end (16), a rear end (14) and a melt bore (18) extending therethrough, an electrical heating element (32) metalurgically bonded to the inner portion (12) using a first material (76), and a removable tip insert (44) metalurgically bonded to the front end (16) of the inner portion (12) using a second material (82) which has a lower melting temperature than said first material (76).

E2
16. (Amended) Injection molding apparatus as claimed in claim 19 wherein the tip insert (44) is brazed to the front end (16) of the inner portion (12).

E3
18. (Amended) Injection molding apparatus as claimed in claim 16 wherein the heating element (32) is integrally brazed into a spiral groove (34) extending around the outer surface (22) of the inner portion (12).

20. Injection molding apparatus as claimed in claim 16 wherein the tip insert (44) has at least one tapered front tip (54).

21. Injection molding apparatus as claimed in claim 20 wherein the at least one tapered front tip (54) extends diagonally outward.

E4
24. (Amended) Injection molding apparatus comprising a nozzle (10) with a heater (32), an inner portion (12) having a front end (16), a rear end (14) and a melt bore (18) extending therethrough, a collar portion (20) metalurgically bonded to the inner portion (12) using a first material (76), and a tip insert (44) metalurgically bonded to the inner portion 12 using a second material (82) which has a lower melting temperature than the first material (76).

E5
23. (Amended) Injection molding apparatus as claimed in claim 24 wherein the collar portion (20) and the tip insert (44) are brazed to the inner portion.

25. Injection molding apparatus as claimed in claim 24 wherein the heater is an electrical heating element (32).

E6 26. (Amended) Injection molding apparatus as claimed in claim 25 wherein the heating element (32) is integrally brazed in a spiral groove (34) extending around the outer surface (22) of the inner portion (12) using a material which has a higher melting temperature than said second material.

E7 53. (Amended) Injection molding apparatus comprising a nozzle with a heater, an inner portion having a front end, a rear end and a melt bore extending therethrough, and a tip insert metalurgically bonded to the front end of the inner portion, the tip insert having a melt bore extending therethrough that communicates with the melt bore in the inner portion, wherein the heater comprises an electrical heating element brazed into a spiral groove around the outer surface of the inner portion using a first material, and the tip insert is brazed to the front end of the inner portion using a second material having a lower melting temperature than the first material.

54. Injection molding apparatus as claimed in claim 53, wherein the tip insert is received in a seat at the front end of the inner portion.

55. Injection molding apparatus as claimed in claim 54, wherein the seat and the rear portion of the tip insert have matching configurations.

E8 52. (Amended) Injection molding apparatus as claimed in claim 55, wherein the seat and the rear portion of the tip insert are cylindrical.

E9 56. (Amended) Injection molding apparatus as claimed in claim 53, wherein the tip insert has a tapered front end, and at least a portion of the melt bore in the tip insert extends diagonally outwardly to the outer tapered surface of the front end of the tip insert.

E10
57. (New) Injection molding apparatus as claimed in claim 53, wherein the nozzle further comprises a collar portion metalurgically bonded to the inner portion adjacent the rear end thereof using a material which has a higher melting temperature than said second material.

58. (New) Injection molding apparatus as claimed in claim 57, wherein the collar portion is brazed to the inner portion using said first material.
